Analytical Industries Inc.

Technical Specifications

Accuracy:	< ±2% of FS range under constant conditions
Analysis:	0-100% oxygen
Application:	Verify O_2 content of scuba compressed air tanks
Calibration:	Certified dry 100% oxygen or air after 8 hrs of use
Compensation:	Temperature
Connections:	1x16 mm thread (see options below)
Controls:	Soft touch keypad for ON/OFF and Calibration
Dimensions:	2.72" x 4.1" x 1.35"; weight 7 oz. (196 grams)
Display:	3 digit LCD 1.1" x .625"; resolution 0.1% O_2
Flow Sensitivity:	None between 0.2 to 10 liters per minute
Humidity:	Non-condensing 0-95% RH
Linearity:	± 1% under constant conditions
Pressure:	Inlet - ambient or regulated; vent - atmospheric
Power:	(2) 1.5V AA alkaline batteries; 13,000 hrs of use
Response Time:	90% of final FS reading in 10 seconds
Sensitivity:	< 0.5% of FS range
Sensor:	AII-11-75-PO2 D
Sensor Life:	32 months in air at 25ºC and 1 atmosphere
Storage Temp.:	-20º to 60ºC (-4ºF to 140ºF) on intermittent basis
Temp. Range:	5º to 45ºC (41ºF to 113ºF)
Warm-up Time:	None
Warranty:	12 months analyzer; 12 months sensor

Options & Accessories

AII-11-75-PO2R D Remote Oxygen Sensor Kit
A-3388 Adapter, Dome to Sensor
A-3609 Adapter, Dome to 1/8" Tube
A-3671 Adapter, BC with Restrictor to Sensor
A-3673 Adapter, BC with Restrictor to 1/8" Tube
A-3676 Adapter, 1/8" Tube to Sensor
A-3677 Adapter, DIN to 1/8" Tube
A-3678 Adapter, A-Yoke to 1/8" Tube
FITN-1009 Tee Adapter 15mm ID x 22mm ID x 22mm OD
FITN-1112-1 Flow Diverter
HRWR-1157 Screwdriver
HRWR-1158 Lanyard
TUBE-1018 Tubing, 1/8" x 3'
A-3657-1 Dovetail Mounting Kit
HRWR-1075 Dovetail Female Clamp Pole/Shelf

Palm O_2 Oxygen Analyzer

Easy user interface . . . one touch controls
Simple to use . . . accurate reliable results
One touch calibration . . . 100% O_2 or air
Long battery life . . . 13,000 hrs of use
Advanced sensor technology
State of the art electronics
Certified ISO 9001:2008 QA System

CE
INTERTEK
ISO 9001:2008

2855 Metropolitan Place, Pomona, CA 91767 USA ♦ Tel: 909-392-6900, Fax: 909-392-3665, www.aii1.com, e-mail: diveaii@aii1.com Rev 6/11

Analytical Industries Inc.

NEW

Palm O_2 Oxygen Analyzer

Simple to use . . . accurate reliable results

One touch calibration . . . 100% O_2 or air

Long battery life . . . 13,000 hrs of use

Advanced sensor technology

Certified ISO 9001:2008 QA System

Optional Accessories

A-3388 Adapter, Dome to Sensor

A-3676 Adapter, 1/8" Tube to Sensor

TUBE-1018 Tubing, 1/8" x 3'

A-3609 Adapter, Dome to 1/8" Tube

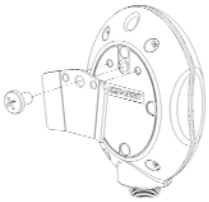
A-3671 Adapter, BC with Restrictor to Sensor

A-3673 BC with Restrictor to 1/8" Tube

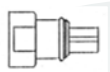
A-3678 Adapter, A-Yoke to 1/8" Tube

A-3677 Adapter, DIN to 1/8" Tube

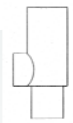
A-3657-1 Dovetail Mounting Kit



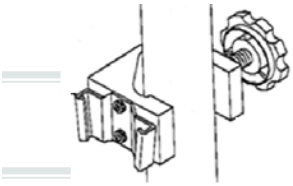
A-3657 Dovetail Bracket
HRWR-1162 Screw 1/4-20 x 3/8"



FITN-1112-1 Flow Diverter



FITN-1009 Tee Adapter



HRWR-1075 Dovetail Clamp Pole or Shelf

HRWR-1157 Screwdriver

HRWR-1158 Lanyard

Remote Oxygen Sensor Kit

Palm O2 DR with A-3654 Remote Sensor Connector

CABL-1009 Cable 6 ft. Phone Plug with Lock Nut

AII-11-75-PO2RD Oxygen Sensor

2855 Metropolitan Place, Pomona, CA 91767 USA ♦ Tel: 909-392-6900, Fax: 909-392-3665, www.aii1.com, e-mail: diveaii@aii1.com Rev 6/11

Analytical Industries Inc.

Instructions for Use

UKAS QUALITY MANAGEMENT
061

CE

dba Advanced Instruments Inc.,
ona, CA 91767 USA.
909-392-3665
aii1.com, Web: www.aii1.com

Palm O_2 D
Oxygen Analyzer

1 Introduction

Congratulations on your purchase, these Instructions for Use describe the precautions, set-up, operation, maintenance and specifications of the Palm O2 Oxygen Analyzer.

This symbol means CAUTION – Failure to read and comply with the Instructions for Use could damage the device and possibly jeopardize the well being of the user.

Note: Analytical Industries Inc. cannot warrant any damage resulting from the misuse, unauthorized repair or improper maintenance of the device.

1.1 Indications for Use

The Palm O2 Oxygen Analyzer is intended to measure and display the concentration of oxygen in compressed breathing air tanks intended for scuba diving.

Users must read the following statements as they are essential to reducing the risk of use error due to ergonomic features of the device or the environment in which the device is intended to be used.

The device has been designed and manufactured in such a way that when used under the conditions and for the purposes intended, they will not compromise the safety of the users or other persons.

Conformity with essential requirements has been demonstrated by verifying the performance of the device under normal conditions, bench testing and determining that undesirable malfunctions constitute minimal risk to users.

Do not sterilize, autoclave, liquid sterilize, immerse in any liquid or expose the device or accessories to steam, ethylene oxide or radiation sterilization.

The device is intended to be re-usable. Should the device or accessories come in contact with patient bodily fluids, either dispose of the device or clean with a soft cloth dampened with 70% isopropyl alcohol solution in water and allow the components to air-dry before re-use .

Do not operate the analyzer near equipment capable of emitting high levels of electromagnetic radiation as the reading may become unstable.

performance, the operation of the device must be
h these Instructions for Use. Maintenance should
d personnel authorized by the manufacturer.

er is intended to measure and display the concen-
in compressed breathing air tanks intended for

er is designed to be handheld but can be tempo-
on on a pole or shelf with optional bracket attach-
on 8.1. A remote sensor option is available which
exible and easier to use. Either way, it provides
accurate oxygen measurements.

ochemical galvanic fuel cell type oxygen sensor of
used to measure oxygen concentrations from 0%
ygen, the fuel for this electrochemical transducer,
rough a gas permeable membrane reacts chemi-
e to produce an electrical current output propor-
ration in the gas phase. The sensor has an abso-
n no oxygen is present to be chemically reacted
n.

is linear over the entire range, remains virtually
useful life and drops off sharply at the end. The
ntenance and is simply replaced at the end of its
asmuch as the sensor is a transducer in its own
affected by whether the analyzer is ON or OFF.

the-art micro-processor converts the sensor's sig-
partial pressure of oxygen in the gas stream being
gen reading is displayed by a large easy to read
(LCD) that has a resolution of 0.1% oxygen. The
from a keypad and provides system diagnostics
continuous monitoring that enhance both safety

vice is thoroughly tested at the factory and docu-
uality Control Certification that is included in the
with every device.

2 Quality Control Certification

Customer: _____ Order No. _____ Date: _____

Model: Palm O_2 Oxygen Analyzer, Diving S/N _____

Sensor: ( ) AII-11-75-PO2D or ( ) AII-11-75-PO2RD S/N _____
(plus A-3654, CABL-1009)

Electronics: A-1190 PCB Assembly Main Software Version _____

Accessories: BATT-1008 Battery, 1.5V AA Alkaline (Qty 2)
P-0188 Manual, Instructions for Use ..... Included _____

QC Test:		PASS
	LCD display 3-1/2 digits	_____
	Battery symbol displays when battery is low	_____
	Span adjustment ±10-30% FS with 100% oxygen calibration	_____
	Following calibration with 99-100% oxygen and flushing with ambient air, oxygen reading as displayed by LCD 20.9% ±2%	_____
	Span adjustment ±10-30% FS with air calibration	_____
	Following calibration with air (20.9% oxygen) and exposing to 99-100% oxygen, LCD displays 100% ±2%	_____
	Overall inspection for physical defects	_____

Options:

Item No.	Qty	Item No.	Qty
A-3388 Adapter, Dome to Sensor	____	A-3678 Adapter, A-Yoke to 1/8" Tb	____
A-3671 Adapter, BC Rstr to Sensor	____	FITN-1009 Tee Adapter	____
A-3676 Adapter, 1/8" Tb to Sensor	____	FITN-1112-1 Flow Diverter	____
TUBE-1018 Tubing, 1/8" x 3'	____	HRWR-1157 Screwdriver	____
A-3609 Adapter, Dome to 1/8" Tube	____	HRWR-1158 Lanyard	____
A-3673 Adapter, BC Rstr to 1/8" Tb	____	HRWR-1075 Dovetail Clamp	____
A-3677 Adapter, DIN to 1/8" Tube	____	A-3657-1 Dovetail Mounting Kit (A-3657, HRWR-1162)	____

Delivery:

gs

statements below as they are essential to reducing
due to ergonomic features of the device or the
the device is intended to be used.

who have read, understand and agree to follow the
uld operate the device.

for Use for future reference.

trained authorized personnel. Failure to do so may
and void the warranty.

accessories before operating and ensure: (a) there
al damage; (b) the sensor (particularly the sensing
connections are dry; and, (c) the sensor is installed
ny humidifying device for accurate calibration and

own source of dry air or 100% oxygen before using
rs of continuous use; (b) when the temperature or
ng environment changes; (c) if the oxygen sensor
and reconnected; (d) after the battery or oxygen
ed.

a) install the optional accessories as shown in Sec-
there is a tight fit between the components.

nt or controlled atmospheres unscrew and remove
e oxygen sensor.

cessories in accordance with Section 6.1.2**.**

ction 6.2: (a) replace the batteries when the 'LO'
n the LCD and (b) calibrate the analyzer after re-

tion or replacement Section 6.3 or 6.5: allow the
for 15-20 minutes in ambient air before attempting

ning the power OFF and removing the batteries if
perated for over thirty (30) days.

rocedure that caused a perceived malfunction and
hints in Section 7 before concluding the device is
act the manufacturer for assistance.

NEVER operate the device in any manner described below doing so may compromise the clinical condition or the safety of patients, users or other persons.

- If the reading is unstable or a malfunction is suspected.
- After the 'ERR' or 'LO' messages are displayed on the LCD.
- Near equipment capable of emitting high levels of electromagnetic radiation (EMI) or radio frequency interference (RFI).
- Expose the device; particularly the LCD display or sensor to sources of extreme heat, cold or excessive sunlight beyond the device's storage temperature range, refer to Section 8 for extended periods of time.
- In a gas stream with a vacuum greater than 14" water column.
- Immerse the device, oxygen sensor or optional coiled cable in any liquid.
- Outside of the parameters specified in Section 8 particularly at flow rates greater than 10 liters per minute - the backpressure generated produces erroneously high oxygen readings.
- Calibrate: (a) with 20.9% oxygen or room air with the intent of taking oxygen measurements at oxygen levels above 30% oxygen; (b) in a humidified gas stream or atmosphere; (c) without allowing a newly installed sensor to stabilize for 15-20 minutes in ambient air.
- Attempt to sterilize, autoclave, liquid sterilize, immerse in any liquid or expose the device or accessories to steam, ethylene oxide or radiation sterilization.
- Open the main compartment of the device, except to change the integral oxygen sensor.
- Open the oxygen sensor or probe the sensing surface, refer to Section 10 in the event the sensor should leak and someone comes in contact with the electrolyte from inside the sensor.
- Optional remote sensor with a cable that appears worn, torn or cracked, or, allow an excess length of cable near the patient's head or neck; secure it to the bed rail or other suitable object to avoid the possibility of strangulation.
- Allow the device or oxygen sensor to be serviced, repaired or altered by anyone except trained personnel – failure to do so may endanger the patient or damage the device rendering the warranty null and void.

Container:

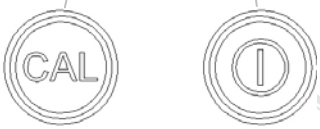
zer
Use

remote sensor option
accessories.

ed with the batteries
nstalled at the factory
ration and use.

secured in a plastic bags and stored next to the
tainer.

s for shipping damage. If any component appears
operate the device and contact the manufacturer
9.



micro-processor
2) pushbuttons
e front cover.
on routine.
the electronics

bove right, not only sup-
cs but initiates diagnostic
battery voltage.

detected during the Start-
peration causes the LCD
between LO and the oxy-
PLING mode.

output must be confirmed
evice as described in the

4.4 Calibration

Electrochemical oxygen sensors generate slightly different signal outputs under identical conditions due to variations in the thickness of the sensing membrane and manufacturing process.

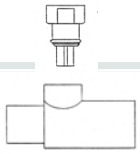
Simulate the application for optimum accuracy: Review Sections 3 Safety Warnings and 5.2 Application Considerations before proceeding.

The devices are designed to meet the requirements for both ambient and elevated oxygen measurements but should **NEVER** be calibrated with air or 21% oxygen with the intent of taking oxygen measurements at oxygen levels above 30% oxygen.

Accordingly, the devices may be calibrated with either air (20.9%) or 100% oxygen which requires the user to make a conscious decision to bypass or skip the recommended 100% oxygen calibration.

Set-Up:

Static Atmosphere | Flowing Gas Stream | Flowing from Tank



See Section 8.1 for optional accessories

known source of dry air,
n before using each day
ontinuous use; (b) when
pressure of the operating
f the oxygen sensor has
connected; (d) after the
s been replaced.

he calibration gas (refer
or approximately 30 sec-
r to stabilize.

sensor to the calibration
routine is complete.

pushbutton for three (3)
calibration routine.

., top right, during the
h takes 15-20 seconds.

nes from the sensor's
the device is being cali-
1% oxygen.

successful, the LCD will
ottom right, the oxygen
n gas and returns to the

gas and begin sampling.

Calibration Fails

If the calibration fails, the LCD will display ERR as illustrated.

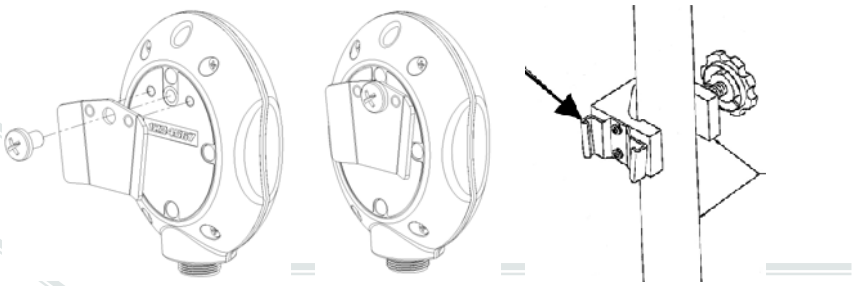
An unsuccessful calibration can be caused by several problems with the sensor, calibration gas or electronics. Dropping the device will damage the sensor and electronics.

Do not proceed until corrective action is taken and the device is calibrated successfully.

If after three (3) unsuccessful attempts to calibrate: review section 7 for possible causes and corrective action or contact Advanced Instruments Inc. at 909-392-6900.

4.5 Mounting

The device can be mounted to a 1" diameter pole or a book shelf using the optional Dovetail Mounting Kit (P/N A-3675-1) and Dovetail Female Clamp Pole/ Shelf (P/N HRWR-1075) as illustrated below.



The dovetail male bracket, top left and middle, is secured to the rear of the enclosure with one (1) screw and held in place by registration holes molded into the enclosure.

The 1" diameter dovetail female, top right, clamp pole/shelf is an optional accessory commonly found in medical applications.

The v-shaped male component simply slides into and out of the pole or shelf mounted female section.

n

er utilizes an electrochemical galvanic fuel cell type
hat is extensively used to measure oxygen concen-
in gas streams. Oxygen, the fuel for this electro-
g into the sensor through a gas permeable mem-
e sensing electrode to produce an electrical current
xygen concentration in the gas phase. The sensor
g that when no oxygen is present to be chemically
0 oxygen.

linear over the entire range, remains virtually con-
ul life and drops off sharply at the end. The sensor
e and is simply replaced at the end of its useful life
the sensor is a transducer in its own right, its ex-
whether the analyzer is ON or OFF.

he sensor's signal and changes with the oxygen
proportional and linear, thus allowing single point
tors that can affect the signal output are described
ation Considerations and Section 3 Safety Warnings
before use.

of galvanic fuel type sensors has been specified as
nd 760mm Hg". The actual life of any galvanic fuel
cted by changes in the average oxygen concentra-
ure it is exposed to during its useful life. For exam-
d AII-11-75-PO2RD sensors have a 32 month ex-
ygen) at 25°C and ambient pressure, however, in a
e the expected life is 12.6 months [60mo/

zer is battery powered by (2) AA alkaline batteries
of-the-art microprocessor. The batteries provide
he analyzer continuously for approximately 13,000
membrane type keypad for users to communicate
essor. The digital electronics provide features such
warning indicators that enhance both safety and
riteria, quality program and performance features
oxygen measurements.

5.2 Application Considerations

Effect of Temperature

All membrane clad electrochemical sensors are temperature dependent due to the expansion and contraction of the Teflon sensing membrane. As result more or less of the sample gas including oxygen to be reacted diffuses into the sensor. The oxygen sensor's electrical current signal output varies linearly with oxygen concentration. The signal also varies with changes in ambient temperature. The temperature coefficient is typically 2.54% of the signal or reading per degree C change in temperature.

The temperature dependent current signal output is compensated by using a resistor-thermistor network. With a proper resistor-thermistor network, the signal can be compensated to within ±5% of the oxygen reading over the 5-45°C temperature range. This is the worse case situation when going from one extreme of the operating temperature range to the other. The error will be eliminated when the thermistor in the temperature compensation network and the electrolyte inside the sensor reach thermal equilibrium in approximately 45-60 minutes.

Erroneous oxygen readings can result if the gases flowing over the sensing area of the sensor are not at ambient temperature. This occurs because the sensor is exposed to different temperatures. The sensing area of the sensor is o-ring sealed in the sample gas and the temperature compensation network at the rear of the sensor is exposed to ambient temperature.

Effect of Pressure

Electrochemical sensors actually measure the partial pressure, not the percentage, of oxygen in the gas stream they are exposed to. These sensors are accurate at any pressure provided the pressure is constant and the analyzer has been calibrated at the same pressure as the sample gas measured.

For example, when connected to a gas stream where the pressure varies, oxygen sensor causes the analyzer to display fluctuating oxygen readings. The fluctuations in the readings displayed are not related to a change in the oxygen percentage but to the change in partial pressure.

Calibrate at the temperature and pressure (altitude) at which the analyzer will be operated.

by non-condensing relative humidity (RH). How-
vapor or moisture increases the total pressure
ng the oxygen concentration of the gas mixture
eading.

cting on the sensing area or the electrical connec-
ors can adversely impact the performance of elec-
sation blocks the diffusion path of oxygen into the
oxygen reading to 00.0 if the condensation covers
densation on the electrical connections at the rear
gen readings. Remedy either situation by shaking
owing the sensor to air dry.

many instances as a sensor failure, excessive con-
ntly wiping away the condensation with a soft cloth
to air dry.

Radiation
00 MHz electromagnetic field, the analyzer is sus-
ted except those between 930 and 990 MHz.

analyzer near equipment capable of emitting high
gnetic radiation. Do not continue to operate the
ng becomes unstable.

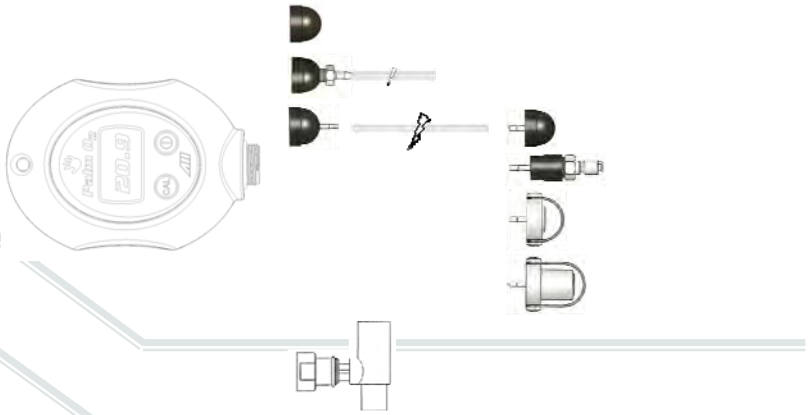
yzer during normal operation involves the same
cedures as those described in Sections 4.4 Start-up
same cautions to review Sections 3 Safety Warn-
tion Considerations.

STS are completed successfully the devices default

alyzer if the reading is unstable or if a malfunction
ration is required as indicated herein, do not pro-
er is calibration successfully.

5.4.1 Flowing Gas Streams

1. Place the sensing area of the sensor into the gas stream to be analyzed upstream of any humidification equipment.
2. Assure that the flow rate of the gas stream does not exceed ten (10) liters per minute. Exceeding ten (10) liters per minute generates backpressure.
3. Check the gas stream and particularly the mechanical connection for leaks that dilute the gas stream with ambient air.
4. Assure there are no restrictions in the circuit downstream of the sensor that could generate backpressure on the sensor.
5. Select a means of flowing gas to the sensor, see below and Section 8.1.
6. Ensure the method selected (a) facilitates the movement of gas to and from (sensor adapters include a vent hole) the sensing area of the sensor, (b) forms a tight seal between the components and (c) limit the flow past the sensor to a rate of 5-8 liters per minute or slightly crack a tank of breathing air until it first hisses out.
7. Once the sensor is exposed to the gas stream allow approximately sixty (60) seconds for the reading to stabilize as displayed by the LCD.



5.4.2 Static Atmospheres

Expose the sensing area of the sensor to the atmosphere allowing approximately sixty (60) seconds for the reading to stabilize and observe the reading displayed by the LCD.

If placing the entire sensor inside the controlled atmosphere review Section 5.2

afety Warnings and Section 7 Troubleshooting for
g the devices.

artment of the analyzer, as it contains no service-
mpt to repair the analyzer or sensor by yourself as
er which could void the warranty.

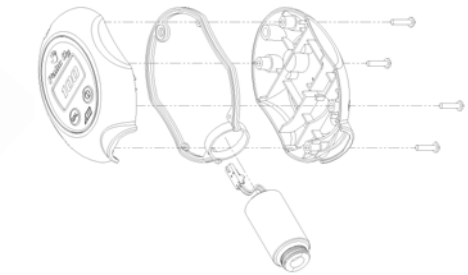
nstructions

ensor and accessories with a soft cloth dampened
sopropyl alcohol solution (70% isopropyl alcohol
ry, before re-use. Allow the components to air-dry

zer is powered by two 1.5V AA alkaline batteries
3,000 hours.

cuit monitors the battery supply
directly to the LCD when the bat-
et level that activates the battery

e top section or front of the ana-
nals mounted directly on the PCB



Procedure:

1. Open the enclosure: Remove the four (4) Phillips screws from the rear of the enclosure, FIG 1.
2. Separate the enclosure and an place it on a flat surface, FIG 2.
3. Remove the battery: Grasp the middle of a battery and gently pull straight up.
4. Locate the positive (+) and negative (-) terminals on the battery.
5. Assure the battery contacts are clean.
6. Align the battery's positive (+) terminal with the corresponding (+) battery symbol printed on the PCB Assembly.
7. Install the battery: Align the battery over the terminal clip mounted on the PCB Assembly and press down until the battery snaps into place, FIG 2.
8. Repeat steps 3-7 with the remaining battery.
9. Reassemble the device as shown in section 6.4
10. Calibrate, see section 4.4, the device after replacing the batteries.

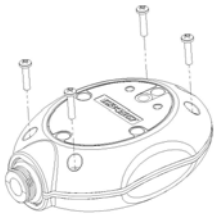


FIG 1

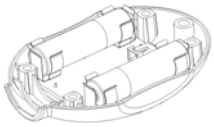


FIG 2

6.3 Oxygen Sensor Replacement - Standard Integral Sensor

The design of the electronics is intended for only the Analytical Industries Inc. AII-11-75-PO2 or AII-11-75-PO2R Oxygen Sensors. Use of a different oxygen sensor may result in an erroneous oxygen reading.

NEVER - Open the oxygen sensor or probe the sensing surface, refer to Section 10 in the event the sensor should leak and someone comes in contact with the electrolyte from inside the sensor.

Procedure - Standard Integral Sensor

1. See 6.2 step 1 above.
2. See 6.2 step 2 above.
3. Disconnect the oxygen sensor: Press down on the latch arm, see arrow, and pull back on the male connector attached to the sensor from the female connector attached to the PCB Assembly, FIG 3.

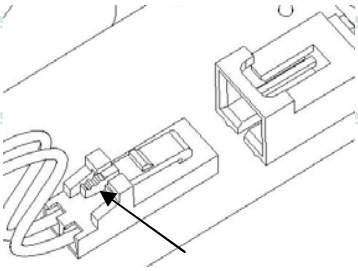


FIG 3

nsor, FIG 4:
e sensor where
are attached.
the sensor out
r, arrow right,
ket that seals the
enclosure.

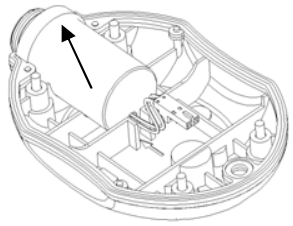


FIG 4

sensor:
e sensor as shown
install.
to the molded collar, arrow
e outer shoulder with the front edge of the collar.
ion peg indicated by the arrow circled in FIG 5.
le where the wires exit the sensor onto the
G 5.

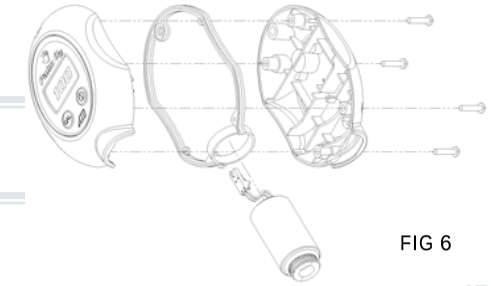
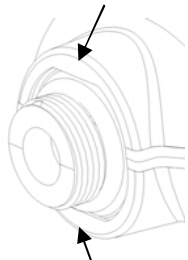


FIG 6

erse section step 3.
as shown in section 6.4.
.4, the device after replacing



after replacing the sensor or
points:
ed in the terminal clip.
registered onto the 4 pegs molded into
he enclosure.

FIG 7

d as shown in FIG 5 and FIG 7 and the connecting
ound when closing up the enclosure and tightening
6.

6.5 Oxygen Sensor Replacement - Optional Remote Sensor

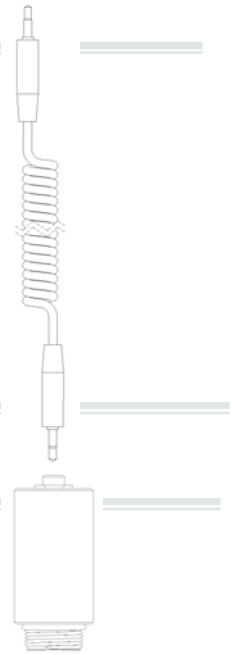
The design of the electronics is intended for only the Analytical Industries Inc. AII-11-75-PO2 or AII-11-75-PO2R Oxygen Sensors. Use of a different oxygen sensor may result in an erroneous oxygen reading.

NEVER - Open the oxygen sensor or probe the sensing surface, refer to Section 10 in the event the sensor should leak and someone comes in contact with the electrolyte from inside the sensor.

With this configuration the integral oxygen sensor is replaced by a connector module (P/N A-3654). The external oxygen sensor (P/N AII-11-75-PO2R) is connected to the module by a cable (P/N CABL-1009) with phone plug and locking nut attached at both ends. The cable is coiled and extends to 6 ft.

Procedure - Optional Remote Sensor

1. Unscrew the locking nut from the connector located at the rear of the oxygen sensor.
2. Remove the new replacement sensor from its shipping packaging.
3. Insert the phone plug into the connector at the rear of the oxygen sensor and finger tighten the locking nut.
4. Allow the new replacement oxygen sensor to stabilize for approximately 30 minutes in its new environment.
5. Calibrate, see section 4.4, after replacing the remote oxygen sensor.



ng

ive action does not resolve the problem return the ice.

	Corrective Action
ysi-	Turn device ON – if it successful passes calibration – proceed
r is	Replace batteries Check battery polarity Check and/or clean battery contacts
er is	Replace battery and calibrate device
yzer	Replace oxygen sensor
	Replace battery
	Calibration routine in process – wait until completed
LCD gen	Replace sensor
dry rifts s	Check primary oxygen delivery device Replace sensor that is nearing the end of its useful life
e or	Relocate analyzer away source of RF or electromagnetic radiation emissions. Wait 5 minutes and repeat calibration Replace sensor, repeat calibration

8 Specifications

Accuracy:	< 2% of FS range under constant conditions
Analysis:	0-100% oxygen
Alarms:	Analyzer none
Calibration:	Certified dry 100% oxygen or air after 8 hrs of use
Compensation:	Temperature
Connections:	1x16mm thread or o-ring diverter
Controls:	Soft touch keypad for ON/OFF and CAL
Dimensions:	2.72" x 4.1" x 1.35"; weight 7 oz. (196 grams)
Display:	3 digit LCD 1.1" x .625"; resolution 0.1% O_2
Flow Sensitivity:	None between 0.2 to 10 liters per minute
Humidity:	Non-condensing 0-95% RH
Linearity:	$\pm$ 1% under constant conditions
Pressure:	Inlet – ambient or regulated; vent - atmospheric
Power:	(2) 1.5V AA alkaline batteries; 13,000 hrs of use
Response Time:	90% of final FS reading in 10 seconds
Sensitivity:	< 0.5% of FS range
Sensor:	AII-11-75-PO2D; optional remote sensor AII-11-75-PO2RD
Sensor Life:	32 months in air at 25ºC and 1 atmosphere
Storage Temp.:	-20º to 60ºC (-4ºF to 140ºF) on intermittent basis
Temp. Range:	5º to 45ºC (41ºF to 113ºF)
Warm-up Time:	None
Warranty:	12 months analyzer; 12 months sensor (any application)

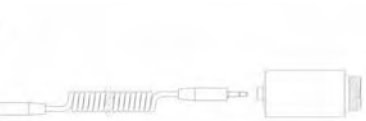
al Accessories

en Sensor

x) 1.5V AA Alkaline

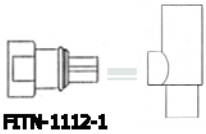
r Use

s:



CABL-1009 Cable 6 ft.
Phone Plug with Lock Nut

AII-11-75-PO2RD
Oxygen Sensor

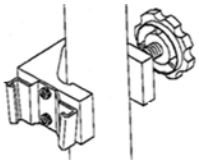


FITN-1112-1
Flow Diverter

FITN-1009
Tee Adapter

HRWR-1157 Screwdriver
HRWR-1158 Lanyard

g Kit



HRWR-1075 Dovetail
Clamp Pole or Shelf

x 3/8"

A-3676 Adapter,
1/8" Tube to Sensor

TUBE-1018 Tubing,
1/8" x 3'

A-3609 Adapter,
Dome to 1/8" Tube

A-3673 BC with
Restrictor to 1/8" Tube

A-3678 Adapter,
A-Yoke to 1/8" Tube

A-3677 Adapter, DIN
to 1/8" Tube

Notes:

ditions, the analyzer and sensors are warranted to
ls and workmanship for the period specified in the
ons. To make a warranty claim, you must return the
postage prepaid to:

l Industries Inc.
tropolitan Place
, Ca 91767 USA
92-6900, F: 909-392-3665
i@aii1.com, W: www.aii1.com

sole discretion shall determine the nature of the
ined to be eligible for warranty we will repair it or,
o charge to you. If we choose to repair your item,
tioned replacement parts of the same or upgraded
anty we will give and it sets forth all our responsi-
xpress or implied warranties.

e date of shipment from Analytical Industries and is
r who submits a claim for a given serial number
readable to be eligible for warranty and will not
ustomer or beyond the warranty period under any

r normal wear and tear; corrosion; damage while in
om misuse or abuse; lack of proper maintenance;
ification of the analyzer; fire; flood; explosion or
vner's Manual.

t liable for losses or damages of any kind; loss of
tal or consequential losses or damages; damages
nisuse, abuse, lack of proper maintenance; unau-
n of the analyzer.

and 5:00pm PST Monday thru Thursday or before
technicians will assist you in diagnosing the prob-
ropriate course of action.

10 Material Safety Data Sheet (MSDS)

Product name	Electrochemical Galvanic Fuel Cell Oxygen Sensor
Exposure	Sealed device with protective coverings, normally no hazard
Ingredients	Carcinogens - none; Potassium Hydroxide (KOH), Lead (Pb)
Properties	Completely soluble in H_2O; evaporation similar to H_2O
Flash Points	Not applicable, non-flammable
Reactivity	Stable; avoid strong acids, emits fumes when heated
Health Hazard	KOH entry via ingestion - harmful or fatal if swallowed; eye - corrosive, possible loss of vision; skin contact - corrosive, possible chemical burn. Liquid inhalation is unlikely. Lead - known to cause birth defects, contact unlikely
Symptoms	Eye contact - burning sensation; skin contact - slick feeling
Protection	Ventilation - none; eye - safety glasses; hands - gloves
Precautions	Do not remove Teflon and PCB coverings; do not probe with sharp objects; avoid contact with eyes, skin and clothing.
Action KOH Leak	Use rubber gloves, safety glasses and H_2O and flush all surfaces repeatedly with liberal amounts of H_2O

10.1 Disposal

Oxygen sensors and batteries should be disposed of in accordance with local regulations for batteries.

WEEE regulations prohibit electronic products from being placed in household trash bins.

Electronic products should be disposed of in accordance with local regulations.